

Application No. 10/808,827

Reply to Office Action

*AMENDMENTS TO THE CLAIMS*

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A chemical-mechanical polishing pad comprising a polishing layer comprising a hydrophobic region, a hydrophilic region, and an endpoint detection port, wherein the hydrophobic region is ~~substantially~~ adjacent to the endpoint detection port and completely surrounds the endpoint detection port, and wherein the hydrophobic region comprises a polymeric material having a surface energy of 34 mN/m or less and the hydrophilic region comprises a polymeric material having a surface energy of more than 34 mN/m.
2. (Original) The polishing pad of claim 1, wherein the hydrophobic region consists of a ring about the perimeter of the polishing layer.
3. (Original) The polishing pad of claim 1, wherein the hydrophobic region and hydrophilic region are in the form of alternating concentric shapes.
4. (Original) The polishing pad of claim 1, wherein the polishing layer contains a plurality of alternating hydrophobic and hydrophilic concentric shapes.
- 5.-6. (Canceled)
7. (Original) The polishing pad of claim 1, wherein the hydrophobic region comprises a polymeric material selected from the group consisting of polyethyleneterephthalate, fluoropolymers, polystyrenes, polypropylenes, polysiloxanes, silicone rubbers, polycarbonates, polybutadienes, polyethylenes, acrylonitrile butadiene styrene copolymer, fluorocarbons, polytetrafluoroethylenes, and combinations thereof.
8. (Original) The polishing pad of claim 1, wherein the hydrophilic region comprises a polymeric material selected from the group consisting of thermoplastic polymers, thermoset polymers, and combinations thereof.

Application No. 10/808,827

Reply to Office Action

9. (Original) The polishing pad of claim 8, wherein the thermoplastic polymer or the thermoset polymer is selected from the group consisting of polyurethanes, polyvinylalcohols, polyvinylacetates, polyvinylchlorides, polyvinylidene chlorides, polycarbonates, polyacrylic acids, polyacrylamides, nylons, polyesters, polyethers, polyamides, polyimides, polyetheretherketones, copolymers thereof, and mixtures thereof.

10. (Original) The polishing pad of claim 8, wherein the polymer is a polyurethane.

11. (Original) The polishing pad of claim 1, wherein the endpoint detection port comprises an aperture.

12. (Original) The polishing pad of claim 1, wherein the endpoint detection port comprises an optically transmissive material.

13. (Original) The polishing pad of claim 12, wherein the optically transmissive material has a light transmission of at least 10% at one or more wavelengths of from about 190 nm to about 3500 nm.

14. (Original) The polishing pad of claim 12, wherein the optically transmissive material is affixed to the polishing layer without the use of an adhesive.

15. (Original) The polishing pad of claim 1, wherein the polishing layer further comprises abrasive particles.

16. (Original) The polishing pad of claim 15, wherein the abrasive particles comprise metal oxide selected from the group consisting of alumina, silica, titania, ceria, zirconia, germania, magnesia, co-formed products thereof, and combinations thereof.

17. (Original) The polishing pad of claim 1, wherein the polishing layer further comprises a polishing surface comprising grooves.

Application No. 10/808,827

Reply to Office Action

18. (Original) The polishing pad of claim 1, further comprising a subpad layer that is substantially coextensive with the polishing layer, wherein the subpad layer comprises an optical endpoint detection port that is substantially aligned with the optical endpoint detection port of the polishing layer.

19. (Original) The polishing pad of claim 18, wherein the optical endpoint detection port of the polishing layer comprises an optically transmissive material, and the optical endpoint detection port of the subpad layer comprises an aperture.

20. (Original) The polishing pad of claim 18, wherein the optical endpoint detection port of the polishing layer comprises an aperture, and the optical endpoint detection port of the subpad layer comprises an optically transmissive material.

21. (Original) The polishing pad of claim 20, wherein the optical endpoint detection port of the polishing layer comprises a ring of a hydrophobic material surrounding an aperture.

22. (Original) A method of polishing a substrate comprising

- (i) providing a workpiece to be polished,
- (ii) contacting the workpiece with a chemical-mechanical polishing system comprising the polishing pad of claim 1, and
- (iii) abrading at least a portion of the surface of the workpiece with the polishing system to polish the workpiece.

23. (Original) The method of claim 22, wherein the method further comprises detecting *in situ* a polishing endpoint.